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09/608,818	06/30/2000	Jiann H. Chen	81326D-W	2410

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EXAMINER

TSOY, ELENA

ART UNIT PAPER NUMBER

1762

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/608,818

Applicant(s)

CHEN ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 7-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 11, 2005 has been entered. Claim 6 has been cancelled. Claims 1-5, 7-20 are pending in the application.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) and incorporated by reference Lentz (US 4,257,699) in view of Schlueter, Jr. et al (US 5,995,796), Kirk-Othmer (Encyclopedia of Chemical Technology, 1994) and Lewis (Hawley's Chemical Dictionary, 1997).

Hartley et al/Lentz in view of Schlueter, Jr. et al are applied here for the same reasons as set forth in Paragraph No. 5 of the Office Action mailed on March 5, 2002 (Paper No. 3).

As was discussed in Paragraph No. 5 of the Office Action mailed on March 5, 2002, Hartley et al disclose a method of making a fuser member having a support comprising the steps of providing a support (See column 8, lines 9-12); coating onto the support an organic solvent-

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based coating composition (See column 8, lines 4-6) comprising non-cured backbone fluoroelastomers (See column 2, lines 31-32), a curing agent having a bisphenol residue (See column 3, lines 5-11), a particulate filler containing a combination of (See column 6, lines 51-52) metal oxides such as zinc oxide, antimony oxide, tin oxide (See column 6, lines 42-53) and aminosiloxane (See column 2, lines 48-50; column 5, lines 27-46), gradually raising the temperature of the coating composition from 20<sup>0</sup>C to 230<sup>0</sup>C for 12-24 hours and then curing at that temperature for 24 hours (See column 8, lines 26-33). Hartley teaches that (any) vinylidene fluoride-based fluoroelastomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelastomers (See column 2, lines 64-66) including terpolymers of vinylidene fluoride with hexafluoropropylene and tetrafluoroethylene known commercially as Viton B (See column 2, lines 66-68; column 3, lines 1-4) (which is known to contain claimed subunits in an amounts within claimed ranges, namely, x = 61 %, y=17 % and z=22 %).

However, Hartley et al do not expressly show that vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include thermoplastic random fluoroelastomers.

It is well known in the art that elastomers, including fluoroelastomers, include both thermosetting and thermoplastic polymers, as evidenced by Lewis and Kirk in entirety, especially page 25 of Kirk.

Thus, it is reasonable to conclude that the elastomers including vinylidene fluoride-hexafluoropropylene-based fluoroelastomers of Hartley et al are embraced by the claimed fluorocarbon thermoplastic polymers because it is well known in the art that elastomers, including fluoroelastomers, include both thermosetting and thermoplastic polymers, as evidenced by Lewis and Kirk in entirety.

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4. Claims 1-5, 7-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) in view of Schlueter, Jr. et al (US 5,995,796), Blong et al (US 5,549,948), Kirk-Othmer (Encyclopedia of Chemical Technology, 1994) and Lewis (Hawley's Chemical Dictionary, 1997).

Hartley et al/in view of Schlueter, Jr. et al and Blong et al are applied here for the same reasons as set forth in Paragraph No. 7 of the Office Action mailed on July 17, 2002, 2002 (Paper No. 5).

As was discussed in Paragraph No. 7 of the Office Action mailed on March 5, 2002, Hartley et al disclose a method of making a fuser member having a support comprising the steps of providing a support (See column 8, lines 9-12); coating onto the support an organic solvent-based coating composition (See column 8, lines 4-6) comprising non-cured backbone fluoroelasomers (See column 2, lines 31-32), a curing agent having a bisphenol residue (See column 3, lines 5-11), a particulate filler containing a combination of (See column 6, lines 51-52) metal oxides such as zinc oxide, antimony oxide, tin oxide (See column 6, lines 42-53) and aminosiloxane (See column 2, lines 48-50; column 5, lines 27-46), gradually raising the temperature of the coating composition from 20<sup>0</sup>C to 230<sup>0</sup>C for 12-24 hours and then curing at that temperature for 24 hours (See column 8, lines 26-33). Hartley teaches that (any) vinylidene fluoride-based fluoroelasomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelasomers (See column 2, lines 64-66) including terpolymers of vinylidene fluoride with hexafluoropropylene and tetrafluoroethylene known commercially as Viton B (See column 2, lines 66-68; column 3, lines 1-4) (which is known to contain claimed subunits in an amounts within claimed ranges, namely, x = 61 %, y=17 % and z=22 %).

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It is well known in the art that elastomers, including fluoroelastomers, include both thermosetting and thermoplastic polymers, as evidenced by Lewis and Kirk in entirety, especially page 25 of Kirk.

Thus, it is reasonable to conclude that the elastomers including vinylidene fluoride-hexafluoropropylene-based fluoroelastomers of Hartley et al are embraced by the claimed fluorocarbon thermoplastic polymers because it is well known in the art that elastomers, including fluoroelastomers, include both thermosetting and thermoplastic polymers, as evidenced by Lewis and Kirk in entirety.

5. Claims 1-5, 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) and incorporated by reference Lentz (US 4,257,699) in view of Schlueter, Jr. et al (US 5,995,796), further in view of Friedman et al (US 5,908,704).

Hartley et al/Lentz in view of Schlueter, Jr. et al are applied here for the same reasons as above.

Hartley et al do not expressly show that vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include thermoplastic random fluoroelastomers.

Friedman et al teach that commercially available vinylidene fluoride-hexafluoropropylene-based fluoroelastomers also include **thermoplastic** (fluoro)**elastomer** terpolymer (random) THV containing 42-60 mole % (claimed z) of fluoroplastic hard segment of tetrafluoroethylene (ECTFE), 20-18 mole % (claimed y) of elastomeric soft segment of

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hexafluoropropylene (HFP), and 38-22 mole % (claimed x) of elastomeric soft segment of vinylidene fluoride (VDF) (See column 2, lines 52-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available thermoplastic elastomer THV of Friedman et al comprising 38-22 mole % of VDF subunits, 20-18 mole % of HFP subunits and 42-60 mole % of ECTFE subunits as backbone fluoroelastomers in Hartley et al/Lentz in view of Schlueter, Jr. et al since Hartley teaches that (any) vinylidene fluoride-based fluoroelastomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelastomers.

It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988).

6. Claims 1-5, 7-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) in view of Schlueter, Jr. et al (US 5,995,796) and Blong et al (US 5,549,948), further in view of Friedman et al (US 5,908,704).

Hartley et al/ in view of Schlueter, Jr. et al and Blong et al are applied here for the same reasons as above. Hartley et al do not expressly show that vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include thermoplastic random fluoroelastomers.

Friedman et al are applied here for the same reasons as above.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available thermoplastic elastomer THV of Friedman et al comprising 38-22 mole % of VDF subunits, 20-18 mole % of HFP subunits and 42-60 mole % of ECTFE subunits as backbone fluoroelastomers in Hartley et al/ in view of Schlueter, Jr. et al and Blong et al since Hartley teaches that (any) vinylidene fluoride-based fluoroelastomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelastomers.

7. Claims 1-5, 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) and incorporated by reference Lentz (US 4,257,699) in view of Schlueter, Jr. et al (US 5,995,796), further in view of Applicants' admitted state of art and Thullen et al (US 20030232207).

Hartley et al, Lentz and Schlueter, Jr. et al are applied here for the same reasons as above. Hartley et al do not expressly show that vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include thermoplastic random fluoroelastomers.

Applicants admitted that commercially available fluorocarbon thermoplastic random copolymers include vinylidene fluoride-hexafluoropropylene-based copolymers such as VF(75)-TFE(10)-HFP(25) marketed by Hoechst under the designation "THV Fluoroplastics" and VF(49)-TFE(41)-HFP(10) marketed by Minnesota Mining and Manufacturing (3M) under the designation "3M THV" (See specification, page 12, lines 23-31). Commercially available **THV (3M/Hoechst)**, a PTFE-HFP-PVDF-Compound, admitted by Applicants to be claimed fluorocarbon thermoplastic random copolymers, are thermoplastic fluorinated elastomers, as evidenced by Thullen et al (See P80). In other words, THV (3M/Hoechst) admitted by



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Applicants as fluorocarbon thermoplastic random copolymers are also referred to in the art as thermoplastic fluorinated elastomers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available fluorocarbon thermoplastic random copolymers (thermoplastic fluorinated elastomers) “THV Fluoroplastics” or “3M THV” as backbone fluoroelastomers in Hartley et al/Lentz and Schlueter, Jr. et al since Hartley teaches that (any) vinylidene fluoride-based fluoroelastomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelastomers.

8. Claims 1-5, 7-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartley et al (US 4,853,737) in view of Schlueter, Jr. et al (US 5,995,796) and Blong et al (US 5,549,948), further in view of Applicants’ admitted state of art and Thullen et al (US 20030232207).

Hartley et al, Schlueter, Jr. et al and Blong et al are applied here for the same reasons as above. Hartley et al do not expressly show that vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include thermoplastic random fluoroelastomers.

Applicants admitted that commercially available vinylidene fluoride-hexafluoropropylene-based fluoroelastomers include fluorocarbon thermoplastic random copolymers such as VF(75)-TFE(10)-HFP(25) marketed by Hoechst under the designation “THV Fluoroplastics” and VF(49)-TFE(41)-HFP(10) marketed by Minnesota Mining and Manufacturing under the designation “3M THV” (See specification, page 12, lines 23-31). Commercially available **THV (3M/Hoechst)**, a PTFE-HFP-PVDF-Compound, admitted by Applicants to be claimed fluorocarbon thermoplastic random copolymers, are thermoplastic

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fluorinated elastomers, as evidenced by Thullen et al (See P80). In other words, THV (3M/Hoechst) admitted by Applicants as fluorocarbon thermoplastic random copolymers are also referred to in the art as thermoplastic fluorinated elastomers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available fluorocarbon thermoplastic random copolymers (thermoplastic fluorinated elastomers) “THV Fluoroplastics” or “3M THV” as backbone fluoroelastomers in Hartley et al/ Schlueter, Jr. et al and Blong et al since Hartley teaches that (any) vinylidene fluoride-based fluoroelastomers which contain hexafluoropropylene as a comonomer are suitable as backbone fluoroelastomers.

9. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.

Eddy et al (US 5,017,432) teach that Viton B contains claimed subunits in an amounts within claimed ranges, namely,  $x = 61\%$ ,  $y = 17\%$  and  $z = 22\%$  (See column 6, lines 4-6).

Shifman et al (US 6,203,873) teach that thermoplastic fluoroelastomers are known and include terpolymers of hexafluoropropylene-vinylidene fluoride-tetrafluoroethylene (See column 6, lines 31-42).

### ***Response to Arguments***

10. Applicant's arguments with respect to claims rejected over new ground(s) of rejection are moot.

11. Applicants' arguments filed February 11, 2005 have been fully considered but they are not persuasive.

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Applicants argue that it is well known in the industry that Viton B is a fluoroelastomer that cannot have thermoplastic properties, and THV fluoropolymers are thermoplastic and cannot be fluoroelastomer (See specification, page 12, lines 23-32).

The Examiner respectfully disagrees with this argument.

Firstly, according to Applicants' own material (See "Comparison of Dupont Dow Viton Fluoroelastomers"), Viton B can be processed by **injection molding, extrusion, and calendering**, i.e., Viton B has properties of **thermoplastic** materials. Secondly, in contradiction to Applicants' statement, both VITON and THV fluoropolymers are **fluoroelastomers**, as evidenced by Gilbert (US 2002/00011543, Abstract; [0007]).

Secondly, it is well known in the art that thermoplastic can be fluoroelastomer and fluoroelastomer can be thermoplastic, as evidenced by Shifman et al (US 6,203,873) and Thullen et al (US 20030232207). Shifman et al teach that **thermoplastic fluoroelastomers** are known and include terpolymers of hexafluorenopropylene-vinylidene fluoride-tetrafluoroethylene (not a blend of thermoplastic and fluoroelastomer) (See column 6, lines 31-42). Thullen et al teach that commercially available THV (3M/Hoechst), a PTFE-HFP-PVDF-Compound, admitted by Applicants to be claimed fluorocarbon thermoplastic random copolymers, are thermoplastic fluorinated **elastomers** (See P80). In other words, THV (3M/Hoechst) admitted by Applicants as fluorocarbon thermoplastic random copolymers are also referred to in the art as **thermoplastic fluorinated elastomers**.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-141523. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy  
Primary Examiner  
Art Unit 1762

ELENA TSOY  
PRIMARY EXAMINER

*ETsoy*

March 16, 2005